

REMARKS

Applicants kindly thank the Examiner for conducting the interview of December 22, 2006. A description of the telephonic interview is provided in the Interview Summary filed herewith.

In response to the office action mailed August 8, 2006, Applicants have amended claims 1, 24, 39, 45, and 48; and canceled claims 58 and 59. Claims 2-6, 12, 25-27, 29 and 36 were previously canceled. Thus, claims 1, 7-11, 13-24, 28, 30-35, 37-44, and 45-57 are presented for examination.

35 U.S.C. §112

Claims 39-42 have been rejected under 35 U.S.C. §112, first paragraph, as failing to comply with the written description requirement.

The Examiner states, as the reason for rejection, "the base claim 39 recites the claim limitation, 'placing a printer capable of generating a field in a position external to the device and adjacent an exposed outer surface of the device and passing a field from the printer through the designated area of the device to remove a previously applied graphic label from the designated area while forming a new graphic label within the designated area', which is not described in the specification." Claims 40-42 were rejected due to their dependency on claim 39.

Applicants have amended claim 39, and submit that claim 39, as amended, satisfies the written description requirement of 35 U.S.C. §112. Applicants respectfully request reconsideration and withdrawal of the rejection of claims 39-42 under 35 U.S.C. §112 in view of the amendments to claim 39.

Claim 58 has been rejected under 35 U.S.C. §112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter which the applicant regards as the invention.

The Examiner states, as the reason for rejection, "[t]he term 'without substantially changing' in claim 58 is a relative term which renders the claim indefinite.

Applicants have canceled claim 58, and as such, the rejection is now moot.

35 U.S.C. §103

Claims 1, 7-11, 13-24, 28, 30-35, 37, 38, and 58-59 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Pat. No. 6,788,294 ("Takala") in view of U.S. Pat. No. 6,259,044 ("Paratore").

Regarding claim 1, Applicants disclose and claim a method of changing the visual appearance of a designated area of an exposed surface of a discrete, manipulable key of keypad. The method includes providing a keypad with a circuit board carrying switches, and multiple keys displaceable toward the circuit board to activate a corresponding switch. Each key includes a visible area, at least one of the areas includes a designated area containing a field-stable electrophoretic ink. The method also includes passing a field through only selected regions of the field-stable electrophoretic ink in the designated area to alter a visual characteristic of the ink in the selected regions to form a desired graphic label visible within the designated area.

Claim 1 has been amended to more clearly define the scope of the claimed invention. According to the invention, as now more clearly claimed, the keys include discrete manipulable keycaps, each having "a fixed physical shape in three dimensions."

A person having ordinary skill in the art would not have been motivated to combine Takala and Paratore. Takala describes a customizable user interface similar to a touch screen keypad that includes a multi-layer "key element" having "a layer of material whose volume is responsive to the magnitude of an electric or magnetic field." (See Takala at col. 3, lines 57-60). Individual selectors can be formed by raising various areas on the flat surface of a display by controlling the magnitude of an electric or magnetic field applied to the layer comprising the material whose volume expands with the added magnitude of the electric and/or magnetic field. (See *id.* at col. 4, lines 14-20; *see also id.* at col. 4, lines 46-47). Paratore describes a key-pad overlay for use with an electronic device. (See Paratore at col. 1, lines 58-59). The keypad-overlay is a thin thermoplastic material having a planar web portion and a plurality of cover member projecting away from the web portion. (See *id.* at col. 3, lines 18-21). The cover

members cover and protect keys of the electronic device when the keypad-overlay is positioned over the electronic device. (*See id.* at col. 3, lines 24-26).

The Examiner acknowledged that Takala "does not expressly disclose the term 'keycaps'" (*See* Office Action of August 8, 2006 at page 10). However, the Examiner asserted that "Paratore discloses 'keycaps'" and that "it would have been obvious to one of ordinary skill in the art, at the time the invention was made, to have incorporated keycaps covering the raised selectors of Takala to cover and protect the keys of Takala." (*Id.*).

Contrary to the Examiner's assertion, a person having ordinary skill in the art would not have been motivated to modify Takala by combining Takala with Paratore. According to Takala, "[t]he key that is the object of the invention has the characteristic feature that it can be customized whenever necessary, so a separate user interface is not necessary when requirements change." (*See* Takala at col. 3, lines 10-14). Takala also describes that "[t]he key that is the object of the invention can also be employed for the common control of various electronic devices." (*Id.* at lines 30-32). Specifically, according to Takala, "[d]evices created for different purposes require different user interfaces ... [and] a user interface implemented using the key according to the invention makes it possible to integrate different electronic devices into one in such a way that all the devices can retain their separate user interfaces." (*Id.* at lines 41-50). Thus, Takala provides a user interface that can be *physically customized*, i.e., the arrangement of the selectors, or tactile inputs, can be adjusted to form an application specific user interface for integration into different applications, e.g., a remote control for a television, a camera, the keyboard of a computer, etc. (*See, e.g., id.* at col. 3, lines 30-56).

In contrast, according to Paratore, the cover members of the keypad-overlay are "integrally connected to the web portion and *positioned to extend over a respective key*." (*See* Paratore at col. 3, lines 22-24). The combination of a keypad-overlay having fixed position cover members, as described by Paratore, with the input device of Takala limits customization of the user interface, which is in stark contrast with "the object of the invention" described by Takala. Furthermore, Takala disparages "prior art solutions" which utilize "a common integrated user interface" explaining that "a common integrated user interface would require lots of

tradeoffs between the user interfaces of the different devices; this would render the user interface inconvenient and user-unfriendly." (See Takala at col. 3, lines 43-46).

In addition, Takala and Paratore, whether taken alone or in any proper combination, fail to disclose or suggest each and every limitation of the claimed configuration. Contrary to the Examiner's assertions, neither Takala nor Paratore describes or suggests what is understood in the art as a keycap. However, in order to expedite prosecution, Applicants have amended claim 1. As amended, claim 1 recites "wherein the keys include discrete manipulable keycaps, each having a fixed physical shape in three dimensions," features neither taught nor suggested by either Takala or Paratore.

According to Takala, "the key-based user interface has a flat surface when the electric field is switched off." (See Takala at col. 4, lines 46-47). "The key can be made to operate by raising the selector from the surrounding surface." (*Id.* at col. 4, lines 14-16). According to Takala, movement of the key can be achieved by changing the magnitude of the electric and/or magnetic field applied to the layer of material whose volume decreases with an increase in the magnitude of the electric and/or magnetic field, e.g., at a position of a key press. "As a consequence of this, said layer of material will be compressed at the position of the key press, which means that the key is able to move down and give the user the feeling that the key press was successful." (*Id.* at col. 4, lines 24-33). Thus, Takala is able to create the feel of a displaceable key only by altering the three dimensional shape of the selector.

The Examiner has apparently equated the cover member of Paratore with the keycaps of the claimed configuration. However, Paratore describes that "the ... cover members ... are resiliently collapsible members moveable from a raised position to a collapsed position." (See Paratore at col. 3, lines 43-46). According to Paratore "[t]he cover member 26 is moveable from the raised position toward the respective key 20, and the cover member snaps to the collapsed position when a sufficiently high force is applied on it. As the operator presses on the cover member 26 and the exerted force reaches a predetermined level, the cover member quickly moves to the collapsed position with a snapping action that creates a high tactile indication to the operator of such movement. When the cover member 26 snaps to the collapsed position, the

cover member's activating puck 27 presses against its respective key 20 with a sufficient force to activate the key." (*Id.* at col. 3, line 59-col. 4, line 2). Thus, the cover member of Paratore also changes three-dimensional physical shape during use.

Therefore, neither Takala nor Paratore describe "discrete manipulable keycaps ... having a fixed physical shape in three dimensions," as in the claimed configuration. This is not merely a trivial distinction. The claimed configuration offers enhancements to the more traditional keypad interface, which can provide desirable features with respect to cost, user feedback, speed, and intuitive operation. (See, e.g., Specification at page 7). Additionally, such keycaps can be constructed to maintain their appearance (i.e., both graphically and with regard to physical shape) during use and during periods of inactivity, even in the absence of electrical power. (See *id.*).

In view of the foregoing discussion, Applicants request reconsideration and withdrawal of the rejection of claims 1, 7-11, and 13-23 as being unpatentable over Takala in view of Paratore.

Regarding claim 24, this claim has been amended to recite: "wherein the keys include discrete manipulable keycaps, each having a fixed physical shape in three dimensions," features, as discussed above with regard to claim 1, not described by either Takala or Paratore. Therefore, Applicants respectfully request that this rejection be withdrawn.

Claims 28, 30-35, and 37 depend from claim 24 and are allowable for at least the same reasons.

Regarding claim 38, this claim is directed toward "[a] method of changing the visual appearance of keys of a keypad, the method comprising providing an assembled keypad with at least one key ... containing multiple electrically conductive elements electrically isolated from each other and disposed to overlap in plan view, with each conductive element having a predetermined shape and configured to provide a graphic image corresponding to the predetermined shape when exposed to an electric field, the graphic image being visible from the

exposed key surface ..." Takala and Paratore, whether taken alone or in any proper combination, do not describe or suggest each and every limitation of claim 38.

The Examiner has apparently misinterpreted the language of the claim so as to require that the "at least one key" have a "predetermined shape." (See Office Action of August 8, 2006 at page 23). To clarify, it is the "conductive elements" of the key that have "a predetermined shape." The conductive elements can be exposed to an electric field to provide a graphic image which corresponds to the predetermined shape of the conductive elements.

Takala does not describe a key "containing multiple electrically conductive elements electrically isolated from each other and disposed to overlap in plan view, with each conductive element having a predetermined shape and configured to provide a graphic image corresponding to the predetermined shape when exposed to an electric field." Rather, Takala describes a layered key element which utilizes a membrane layer of electronic ink (E-ink). (See Takala at col. 2, lines 64-65; see also col. 3, line 57-col. 4, line 13). According to Takala, "[a]n image is created on the E-ink membrane by using an electric field to control micro-capsuled color cells in the membrane; one part of the capsules comprises dark-colored cells, and another part comprises light-colored cells. By turning these micro-capsules to different positions, it is possible to create different shades of dark and light areas on the membrane." (*Id.* at col. 2, line 65-col. 3, line 4). "The micro-capsulated pixels that form the image in the E-ink layer ... are controlled by an electric field matrix ... formed of a set of electrodes." (*Id.* at col. 5, lines 55-57). Thus, the graphic image produced by the E-ink layer of Takala corresponds to the positioning of the micro-capsules, rather than the physical shape of the layer itself.

The Examiner adds Paratore for allegedly disclosing "the predetermined shapes for keys and the keycaps" apparently based upon the misinterpretation of the claim language, discussed above. However, Paratore fails to provide the subject matter found lacking with respect to the primary reference. Specifically, Paratore fails to describe or suggest a key "containing multiple electrically conductive elements electrically isolated from each other and disposed to overlap in plan view, with each conductive element having a predetermined shape and configured to

provide a graphic image corresponding to the predetermined shape when exposed to an electric field."

Accordingly, Takala and Paratore, whether taken alone or in combination, do not describe or suggest all of the features of claim 38, and, therefore, Applicants respectfully request that this rejection be withdrawn.

Claims 58 and 59 have been canceled, and as such, the rejection is now moot with respect to claims 58 and 59.

Claims 39-44 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Takala in view of U.S. Pat. 6,498,600 ("Vance").

Claim 39 features placing a data input device adjacent a printer, and passing a field from the printer through a designated area of the device to remove a previously applied graphic label from the designated area while forming a new graphic label visible within the designated area. Neither Takala nor Vance either describe or suggest each and every limitation claim 39.

There is nothing in Takala that suggests placing the device adjacent a printer and printing new graphic labels on the device. Rather, Takala describes a layer of E-ink material that can be used to display patterns such as text. (*See* Takala at col. 5, lines 51-54). An image is created on the E-ink membrane by using an electric field to control micro-capsuled color cells in the membrane. (*See id.* at col. 2, lines 65-67). The micro-capsuled pixels that form the image in the E-ink layer, are controlled by an electric field matrix, formed of a set of electrodes. (*See id.* at col. 5, lines 55-57). According to Takala, the visual appearance is altered in response to pressure provided at the surface of the device (which is detected with an electro resistive material layer), with a pen or finger, neither of which be considered a "printer" that would be capable of "passing a field through a designated area of the device to remove a previously applied graphic label," as recited in claim 39.

Vance describes a keypad with a plurality of keys that provide input to a radiotelephone. (*See* Vance at col. 3, lines 63-64). The keypad includes a light that operates under the control of

a processor to illuminate the keys. (*See id.* at col. 4, lines 35-36). At least one of the keys includes a first contact electrically connected to a reference voltage, and a second contact, spaced apart from the first contact, and electrically connected to a detector. (*See id.* at col. 4, line 65-col. 5, line 2). When the user touches the key, a conductive path is formed between the first and second contacts connecting the reference voltage to the detector, signaling the processor which enables the light to illuminate the keys of the keypad. (*See id.* at col. 5, lines 56-61). However, like Takala, there is nothing in Vance that suggests placing the device adjacent a printer and printing new graphic labels on the device. Rather, Vance describes illuminating the keys of the keypad in response to the detected presence of a user's finger in contact with or in close proximity to a key of the keypad, which cannot be considered a "printer" that would be capable of "passing a field through a designated area of the device to remove a previously applied graphic label," as recited in claim 39.

In view of the foregoing discussion, Applicants request reconsideration and withdrawal of the rejection of claims 39-42 as being unpatentable over Takala in view of Vance.

Claim 43 is directed to a method of altering format of previously entered text through a keypad, and features detecting manipulation of a specific key of the keypad, and in response to detecting manipulation, replacing a displayed, selected text with a differently formatted version of the selected text, according to a predetermined series of formats through which the selected text is cycled upon multiple, sequential manipulations of the specific key.

The portions of the Takala reference that the Examiner relies on as the basis for the rejection of claim 43 suggest, for example, that the described a user interface that can be modified, e.g., by raising and lowering regions on the surface of the user interface to form selectors and/or to display different patterns or text, e.g., according to language-specific settings. However, the Examiner has not identified, nor have the Applicants found, anything in the Takala reference that either teaches or suggests the cyclical reformatting of displayed text in response to the multiple, sequential manipulation of a specific one of the device keys.

Vance describes a keypad that includes keys that are illuminated when a user touches one of the keys. (See Vance at col. 2, lines 11-17). Conductive material is patterned on the keypad to form first and second contacts as electrically isolated portions of the keypad that are electrically connected when the user touches at least one key of the keypad. (See *id.* at col. 6, lines 42-46). When the user touches the keyface, a conductive path is formed between the first and second contacts, which triggers illumination of the keys. (See *id.* at Col. 5, lines 56-61). As the Examiner points out, Vance discloses that "key nomenclature and artwork can be applied to the keys of the keypad." (See *id.* at col. 6, lines 52-54). However, Vance does not provide the subject matter found lacking with respect to Takala. Specifically, Vance does not describe or suggest "detecting manipulation of a specific key of the keypad, and in response to detecting manipulation, *replacing a displayed, selected text with a differently formatted version of the selected text*, according to a predetermined series of formats through which the selected text is cycled upon multiple, sequential manipulations of the specific key." Rather, Vance describes creating the key nomenclature by printing, laser etching and/or selective masking to form patterns of paint or ink on the keys. (See *id.* at col. 6, lines 10-54).

In view of the foregoing discussion, Applicants request reconsideration and withdrawal of the rejection of claims 43-44 as being unpatentable over Takala in view of Vance.

Claims 45-57 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Takala in view of U.S. Pat. 4,857,840 ("Lanchais").

Claim 45 is directed to a method of altering information displayed on an operable, designated data input area of a data input device, and features providing a data input device with multiple data input areas having visible labels associated with the input areas, and transmitting a signal over a wireless network to the data input device from a remote location to alter the visible label of at least one of the data input areas of the data input device in response to the signal.

With regard to the Takala reference, the Examiner apparently postulates that a signal may be generated by a pen or a finger on the input device from a remote location such as a user remote from the input device. However, assuming, without conceding, that a person of ordinary

were to adopt this analogy, Takala still fails to describe the transmission of signal over a wireless network.

According to another perspective, the Examiner asserts that "the device controlling section 30 and functional block diagram 40 of FIG. 3 has software stored in the memory unit 34 to control the user interface 42, to create the user interface 41, and to identify functionality 43 wherein creating the user interface include creating a key or keys to the key element and retrieving values for the local fields in the field matrices of the key element from memory and these values will then be input to the means for altering the field. (See Office Action of August 8, 2006 at page 35). Applicants respectfully submit that no reasonable interpretation of Takala would support the conclusion that that memory unit 34 can be considered a "remote location" from which signals are transmitted to the input device, as the memory unit 34 is part of the controlling section 30, which, at least according to the embodiment of FIG. 3, is part of the device itself. (See, e.g., Takala at col. 8, lines 6-65; FIG. 3).

Furthermore, Takala still fails to describe "transmitting a signal *over a wireless network* ... to alter the visible label of at least one of the data input areas." Rather, according to Takala, "[t]he field matrices 12, 14, 19 of the key element part are preferably connected to the means 32 for altering the field in the device controlling section 30 that control the field matrices, these means for altering the field being the controllers of the voltage and current applied to the field matrices as well as a voltage/current source. The means 32 for altering the field are in turn preferably controlled by the device control unit (MCU, Master Controlling Unit) 31 which is connected to the means for altering the field. The device control unit, e.g., a microprocessor, has been programmed by software stored in the memory unit 34 to control the operation of the device by controlling the changes in the volume of the key element 10; this is achieved by altering the magnitudes of fields generated by field matrices 14 and 19 to the layers 13 and 18, using the means 32 for altering the field." (See Takala at col. 8, lines 19-38). Thus, changes to the key element of Takala are controlled by transmitting voltage and current from the controlling section to the field matrices through a series of connections (i.e., rather than over a wireless network).

The Examiner apparently adds Lanchais for disclosing "providing the keypad with keys with multiple data input areas including the letters, words, figures, etc. and transmitting a signal by the receiver to the keypad from a remote location to alter the visible label of at least one of the data input areas in response to the signal." (See Office Action of August 8, 2006 at page 35).

However, contrary to the Examiner's assertion, Lanchais does not describe or suggest transmitting a signal to a from a remote location to alter the visible label of at least one of multiple data input areas of a keypad. Rather, Lanchais describes a portable receiver that can display, to a user, data coming from a transmitter. (See Lanchais at Abstract; *see also* col. 2, lines 19-27). According to Lanchais, "the receiver (2) is provided with a plurality of keys (23+24) making it possible for the user to select, from a plurality of programs, a program for processing the data received." (*Id.* at col. 6, lines 37-41). "The keys can be colorimetric, or alphabetic, or numeric, or symbolic, or may simultaneously partially or wholly combine these qualities." (*Id.* at col. 6, lines 41-47). However, Lanchais does not describe altering a visible label of the keys based on data received from the transmitter. Rather, Lanchais describes changing the programs from which the user can select, in response to the data received.

In view of the foregoing discussion, Applicants request reconsideration and withdrawal of the rejection of claims 45-57 as being unpatentable over Takala in view of Lanchais.

CONCLUSION

It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims (or other claims) that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this paper, and the amendment of any claim does not necessarily signify concession of unpatentability of the claim prior to its amendment.

The fee in the amount of \$510 for extension of time is being paid concurrently herewith on the Electronic Filing System (EFS) by way of Deposit Account authorization. Please apply any other charges or credits to deposit account 06 1050, referencing attorney docket number 13159-012001.

Respectfully submitted,

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